DEPARTMENT OF EDUCATION-FSA
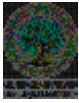
FMS INTEGRATION PARTNER

FORM FUNCTIONAL DESIGN

FMS FP DATAMART INTERFACE ENHANCEMENT TO 130 – FORM 2000 ENHANCEMENTS

Author: Joon Oh
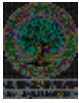Creation Date: March 24, 2003
Last Updated: April 7, 2003

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Document Change Control

Date	Author	Version	Change Reference
03/24/2003	Joon Oh	1.0	Initial Creation

Approval

Created By:	Joon Oh	312-693-5345	**Creation Date:** 03/24/2003
Team Lead Sign Off:	Joanna Zieba	312-693-3414	**Sign Off Date:** 04/11/2003
Project Lead Sign Off:	Jen Alden	202-962-0682	**Sign Off Date:** 04/15/2003
FSA Representative Sign Off:	Matt Fontana	202-377-3005	**Sign Off Date:**

Specification

Program Name:	FMS Form 2000 FP DataMart Interface Enhancement
Functional Design Document ID & Title:	FORM2000_FP_DATAMART_INT_FD.doc
Application:	FMS Annual Form 2000
Priority:	High
Estimated Production Date:	July 2003
Other Affected Applications:	FP DataMart
Comments:	

General Requirements

Business Objective:

As part of TO 130, FMS has been tasked with documenting changes to the FP DataMart Interface to account for the new functionality to Annual Form 2000. Currently, Guarantee Agencies (GA's) are not allowed to re-submit annual forms, but the new functionality will allow GA's to amend annual forms and re-submit them. In order to maintain the accuracy of the FP DataMart reports, the extraction of data from the Annual Form 2000 to FP DataMart must be modified.

The objective of this FP DataMart Interface update is to ensure that all new fields in the amended Annual Form 2000 are passed from the FP DataMart interface into the custom FP DataMart tables.   Currently, the FP DataMart tables do not contain the new fields that will be passed from the FP DataMart Interface. The update will enable the Amendment Version Number, as well as the Most Updated Record Flag to be accepted into the custom FP DataMart tables, SR_FFELGA_ANNUAL_REPORTS and F_FM2000_ANNL.

Component Description:

To fulfill the Business Objective, the columns Most_Updated_Record_Flag and Amendment_Version_Number will need to be added to the SR_FFELGA_ANNUAL_REPORTS table and F_FM2000_ANNL table within the FP DataMart database (HPV2). These new columns will store the additional fields passed from the FP DataMart Interface.

Currently, a direct Oracle database link through the FSA FMS FP DataMart Data Transfer Program is automatically run every 14 days from the FMS database to the FP DataMart database (HPV2). All of the columns are queried from the FFELGA_ANNUAL_REPORTS table of FMS into the source table SR_FFELGA_ANNUAL_REPORTS in the HPV2 database. Once the source tables are populated, the Informatica program compares the newly imported data to existing data and populates any changes to the F_FM2000_ANNL fact table within HPV2. Once the fact table is updated, users are able to run reports through MicroStrategy.

Due to the new functionality in the Annual Form 2000, any reports querying data from the F_FM2000_ANNL table must be updated. These reports are:
- GA Annual
- GA Annual Comparative
- GA Federal Fund
- GA Fee Payments
- GA Net Receivables
- GA Operating Fund
- GA Restricted Account
- GA VFA Performance Measures
- FMS-NSLDS Cross-Check

Currently, these reports query Annual Forms by the GA and the fiscal year ending date. However, with the new functionality, the GA and fiscal year are not sufficient to serve as unique identifiers for an annual report. Since multiple reports can exist for a given year and GA, the combination of GA, fiscal year, and amendment version number will be the new unique identifier for a record. Therefore, reports that query data from the F_FM2000_ANNL table must make the necessary updates.

**Component Risks:**

None
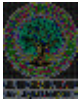
Development Complexity:

Low

Assumptions:

1. Only FP DataMart Annual Reports will be affected by the amended Annual Form 2000 enhancement; Monthly and Quarterly DataMart Reports will not require modification. Also, the Negative Numbers Enhancement will not affect the FP DataMart.
2. The FSA FP DataMart Data Transfer Program queries all columns from the Oracle FFELGA_ANNUAL_REPORTS table into the custom FP DataMart tables, SR_FFELGA_ANNUAL_REPORTS and F_FM2000_ANNL; no code change to the Transfer Program will be necessary.
3. The DataMart Operations Team will make updates to the FP DataMart Annual Reports.
4. The FPDataMart table F_FM2000_ANNL is populated with data from SR_FFELGA_ANNUAL_REPORTS by the Informatica Tool, the scope of this enhancement does not include any update to the Informatica processing.
5. The DataMart Operations Team will update the tables in both the production environment and the test environment.

Design

Process Flow Diagram:
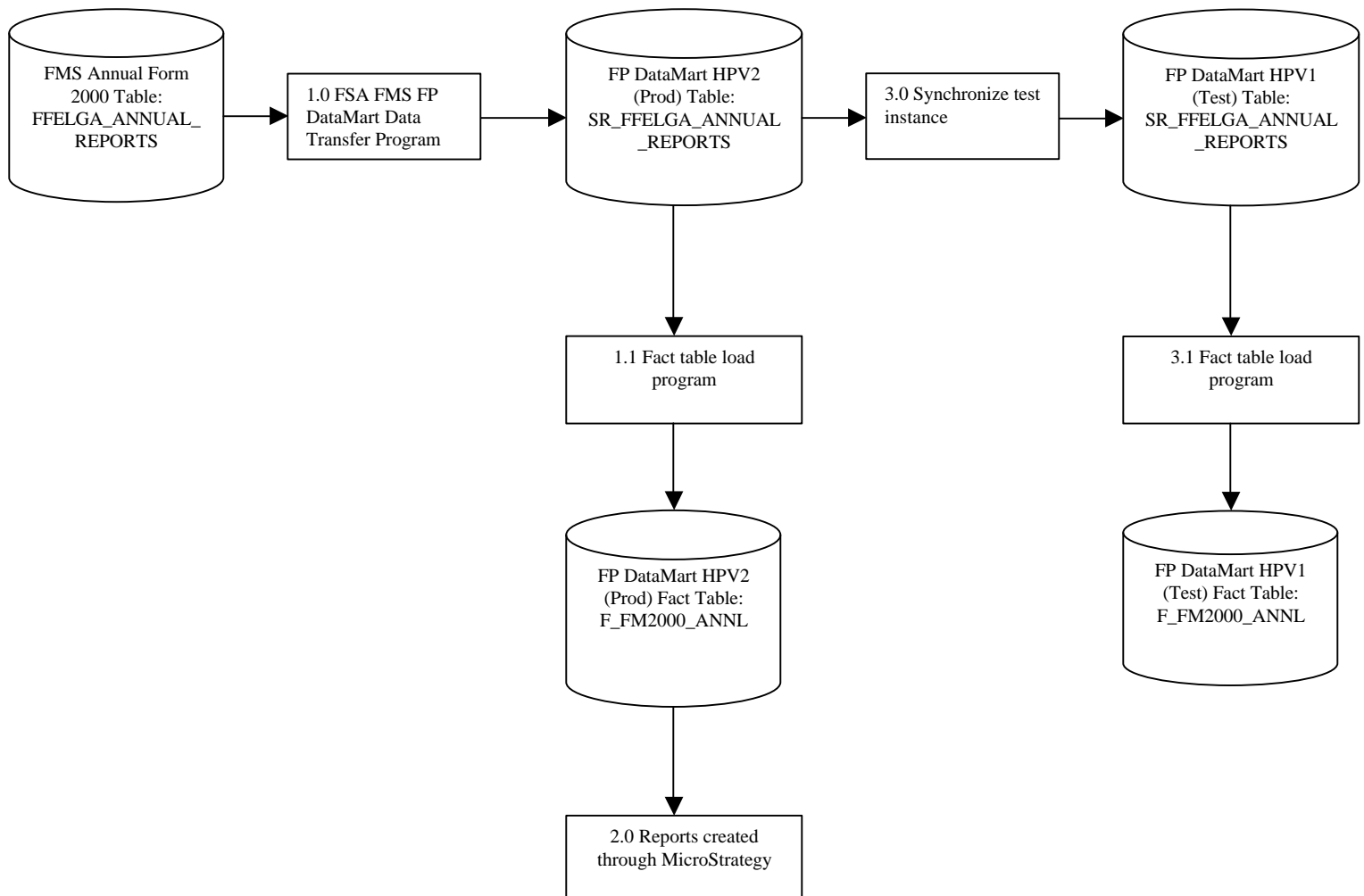
Detailed Description of New/Changes to Existing Program:

1.0 The transfer of data from FMS Form 2000 to FP DataMart occurs every 14 days through the FSA FMS FP DataMart Data Transfer Program. A direct data link transfers data from the FMS database to the FP DataMart database (HPV2).

    a. All fields from the FFELGA_ANNUAL_REPORTS are passed into the SR_FFELGA_ANNUAL_REPORTS table in HPV2.

    b. Both the Amendment Version Number and Most Updated Record should be populated in the SR_FFELGA_ANNUAL_REPORTS table.

1.1 After the initial load of information into the SR_FFELGA_ANNUAL_REPORTS table, the data will be automatically exported from the source table to the fact table (F_FM2000_ANNL) using the Informatica tool. Informatica compares historical data and populates only the incremental changes to the fact table within HPV2.

2.0 After the fact table F_FM2000_ANNL in HPV2 is populated through Informatica, the SR_FFELGA_ANNUAL_REPORTS table is truncated and users are able to generate reports from the F_FM2000_ANNL table via MicroStrategy.

3.0 Synchronize test instance. A query is manually executed every 14 days to insert all data from the SR_FFELGA_ANNUAL_REPORTS table from the production database (HPV2) into the SR_FFELGA_ANNUAL_REPORTS table in the test database (HPV1).

3.1 Once the SR_FFELGA_ANNUAL_REPORTS table in HPV1 is loaded, Informatica compares the historical data and populates only the incremental changes to the fact table (F_FM2000_ANNL) in HPV1.
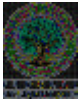
Menu:
N/A

Database Objects:

Database Object Name	Object Type	Oracle Application	Comments
SR_FFELGA_ANNUAL_ REPORTS	Table	FP DataMart	AMENDMENT_VERSION_ NUMBER and MOST_UPDATED_RECOR D will be added to this table
F_FM2000_ANNL	Table	FP DataMart	AMENDMENT_VERSION_ NUMBER and MOST_UPDATED_RECOR D will be added to this table

Dependencies

Dependencies on Other RICE Components:
Amended Annual Form 2000 Enhancement must be developed and migrated into the production environment before the FP DataMart Interface can be run in production.

Dependencies on Other Business Components:
None.

Design Constraints:
None.

Performance Considerations:
None.

Implementation Considerations:
None.

Other Dependencies/Special Concerns:
None.

Error Handling

Potential Errors	Possible Reasons	Solution Strategy

Testing Requirements

Test Condition	Expected Results
Validate that all fields in the SR_FFELGA_ANNUAL_REPORTS table are populated, including Most Updated Record and Amendment Version Number.	All fields in the SR_FFELGA_ANNUAL_REPORTS table are populated, including Most Updated Record and Amendment Version Number.
Validate that all fields in the F_FM2000_ANNL table are populated, including Most Updated Record and Amendment Version Number.	All fields in the F_FM2000_ANNL table are populated, including Most Updated Record and Amendment Version Number.
Validate that reports produced through MicroStrategy display only the most recent amendment data.	Reports display only the most recent amendment data.

	Subject: FP DataMart Interface Enhancement Functional Design
	TO 130 FP DataMart Interface Enhancement

Prepared by: Joon Oh	Date: March 24, 2003	Version: 1.0

Issues and Additional Considerations

The following Issues were defined during Functional Design:

Issue	Raised By / Date Needed	Resolution/Answer	Resolved By / Date Completed
It appears that the new columns and the new functionality will affect the reports created through DataMart. How and who will be responsible for the changes?	J. Oh 3/27/2003	DataMart Ops will perform necessary changes to the reports.	E. Plenge 4/2/03
DataMart Phase 3 will be implemented sometime during this fiscal year. What effect, if any, does this enhancement have on the Phase 3 changes?	J. Zieba 4/18/03	Phase 3 will have no affect on the Form 2000 enhancements.	Scott Mcconaghie 4/17/03